Information & Computer Management

1. **Describe current and emerging computer architecture; configure, install, and upgrade hardware systems; diagnose and repair hardware problems.**

   1.1 Identify hardware components appropriate for specific tasks
   1.2 Explain the purpose, operation, and care of hardware components
   1.3 Identify examples of emerging hardware technology
   1.4 Diagnose hardware problems
   1.5 Illustrate various configurations of hardware components
   1.6 Describe ergonomic principles in the configuration of computer work stations
   1.7 Remove, upgrade, store, and install computer hardware
   1.8 Repair computer hardware problems

2. **Identify, select, evaluate, use, install, upgrade, and customize application software; diagnose and solve problems occurring from application software's installation and use.**

   2.1 Identify the types of application software and explain their purpose or use
   2.2 Select application software types appropriate for specific tasks
   2.3 Describe emerging application software
   2.4 Use reference materials, such as on-line help, vendor bulletin boards, tutorials, and manuals, available for application software
   2.5 Care for and maintain application software
   2.6 Install, upgrade, and customize application software
   2.7 Diagnose and solve application software problems
   2.8 Identify, select, and apply the features of software products, such as galleries, templates, macros
   2.9 Evaluate application software products in terms of their features
   2.10 Select application software products appropriate to various computer platforms
   2.11 Import and export text, data, and images between software programs

3. **Identify, select, evaluate, use, install, upgrade, customize, and diagnose and solve problems with various types of operating systems, environments, and utilities.**

   3.1 Describe various types of operating systems, environments, and utilities
   3.2 Describe emerging operating systems technology
   3.3 Use operating system commands
   3.4 Import, export, and merge data stored in different formats
   3.5 Compare and contrast the functions and features of different operating systems, environments, and utilities
   3.6 Select operating systems, environments, and utilities appropriate to specific hardware and software
   3.7 Organize and maintain directories and files using various operating systems
   3.8 Install and customize operating systems, environments, and utilities
   3.9 Diagnose and repair installations and operational problems of operating systems, environments, and utilities

4. **Select and use word processing, desktop publishing, database spreadsheet, presentation graphics, multimedia, web page, internet, and imaging software and industry-and subject-specific software.**

    4.1 Explain the purposes, functions, and common features of word processing software
    4.2 Explain the meaning of common word processing terminology
    4.3 Compose, organize, and edit information using a keyboard
    4.4 Use touch keyboarding techniques and word processing software to create, modify, store, retrieve, and print documents
    4.5 Proofread and edit documents for accuracy and content, and for correct grammar, spelling, and punctuation
    4.6 Explain the purposes, functions, and common features of database software
    4.7 Explain the meaning of common database terminology
    4.8 Use database software to store, query, retrieve, and sort data
    4.9 Use database software to plan, create, update, add and delete records
    4.10 Explain the meaning of common spreadsheet terms
    4.11 Use spreadsheet software to design, create, manipulate, store, retrieve, update, add, search, sort, print, chart, and delete data
    4.12 Design and enter formulas that permit users to ask "what if" questions to analyze spreadsheet data
    4.13 Explain the purposes, functions, and common features of desktop publishing software
    4.14 Explain the meaning of common desktop publishing terms
    4.15 Identify and apply principles and techniques of publication design
    4.16 Use desktop publishing software to design, create, import data/graphics/scanned images, format, and produce a variety of publications
    4.17 Explain the meaning of common presentation and multimedia software terminology
    4.18 Use database software to plan, create, modify, and print reports
    4.19 Explain the purposes, functions, and common features of presentation and multimedia software
    4.20 Identify principles and techniques of presentation and multimedia design and delivery
    4.21 Use presentation and multimedia software to design, create import data/graphics/scanned images/sound/video, edit, format, sequence and produce a variety of presentation s
    4.22 Identify and explain the various types and sources of subject-specific software such as accounting management software, and marketing software
    4.23 Identify and explain the various types and sources of industry-specific software such as legal software, health services industry software, aerospace industry software, and agricultural industry software
    4.24 Test spreadsheet formulas and design for accuracy
    4.25 Identify and select various imaging software and hardware appropriate for tasks
    4.26 Use various forms of imaging software and hardware to produce documents and compound documents
    4.27 Select and use subject-specific and industry-specific software for tasks
    4.28 Use software as tools to solve organization problems

5. **Design and implement security plans and procedures for information systems.**

    5.1 Identify risks to information systems facilities, data, communications systems, and applications
    5.2 Identify and select controls for information systems facilities, data, communications, and applications appropriate to specific risks
    5.3 Apply procedures used to restart and recover from situation such as system failure and viral infection
    5.4 Identify federal and state legislation pertaining to computer crime, fraud, and abuse
    5.5 Design and implement a security plan for an information system
    5.6 Develop and implement data retention and destruction schedules
    5.7 Develop and implement disaster prevention and recover procedures

6. **Establish and use a personal code of ethics for information systems use and management.**

    6.1 Identify and explain property, privacy, access, and accuracy issues pertaining to information systems, including the impact of these issues on individuals and organizations
    6.2 Analyze various information systems to distinguish ethical issues and problems
    6.3 Develop a code of ethics for information systems
    6.4 Apply ethical considerations to the operation and management of information systems common to organizations

7. **Assess the impact of information systems on society.**

    7.1 Describe how information systems have changed the depth and level of worker responsibilities
    7.2 Describe how information systems have changed social more, including worker/manager protocols, and attitudes toward work, family, school, and other cultures
    7.3 Describe how information systems have fostered greater interdependence among workers, organizations, and nations
    7.4 Describe how new developments in information systems have changed organizations structure
    7.5 Describe how information systems have changed organization structure
    7.6 Describe how information systems have changed the manner in which training is offered and implemented
    7.7 Explain how information systems have contributed to worker productivity

8. **Enter, sort, and retrieve data from databases; evaluate media and file structures; and plan, develop, and modify file specifications and database schema.**

    8.1 Explain the nature and interrelationships of bytes, fields, records, files, and databases
    8.2 Populate (enter data into) and edit fields and records
    8.3 Describe search strategies and use them to solve common information problems
    8.4 Sort and retrieve data from files and databases
    8.5 Plan and develop record specifications
    8.6 Use database application development tools to create information systems to solve organization problems

8.7 Identify and describe electronic and microform storage media
8.8 Evaluate and select electronic and microform storage media appropriate to tasks
8.9 Explain, compare, and contrast sequential, direct, and indexed sequential file structures
8.10 Identify and select file structures appropriate to specific applications
8.11 Modify record structures
8.12 Plan and develop database schema or organization
8.13 Normalize a database schema

9. **Use, select, evaluate, install, customize, plan, design, and diagnose and solve problems with communications and networking systems.**

9.1 Identify the types of communications hardware and explain their functions and use
9.2 Select communications hardware appropriate for specific tasks
9.3 Identify the types of communications software and explain their functions and use
9.4 Select communications software appropriate for specific tasks
9.5 Identify and describe the different components of the telecommunications industry
9.6 Identify and explain various types of on-line services
9.7 Access, navigate, and use on-line services
9.8 Send and receive e-mail messages, voice messages, and faxes
9.9 Identify the basic components of any communications system
9.10 Transfer files between varying types of computers, both local and remote
9.11 Communicate between varying computer platforms
9.12 Identify the types of networks and their features and use
9.13 Select communications software appropriate for specific hardware
9.14 Evaluate communications software products in terms of their features
9.15 Install and customize communications software
9.16 Identify, evaluate, and select telephone systems for various organizational needs
9.17 Explain network topologies and compare their strengths and weaknesses
9.18 Plan and design communications systems
9.19 Diagnose and correct communications systems installation and operational problems
9.20 Identify and explain major protocol standards
9.21 Demonstrate knowledge of inter-organizational and international communications systems
9.22 Apply knowledge of protocol standards to solve connectivity problems
9.23 Maintain and manage networks and communications systems

10. **Plan the selection and acquisition of information systems.**

10.1 Identify sources for information systems hardware and software
10.2 Identify user needs for information systems
10.3 Identify, compare, and contrast optional designs for an information system
10.4 Identify the costs and benefits for each option
10.5 Develop a request for proposal for an information system
10.6 Develop a project plan for identifying, evaluating, selecting,, purchasing, and installing an information system

11. **Analyze and design information systems using appropriate development tools.**

- 11.1 Develop design specifications for reports, screens, and data stores
- 11.2 Complete appropriate documentation for information systems
- 11.3 Identify and describe various structured analysis and design tools
- 11.4 Using structured systems analysis tools, analyze the current system
- 11.5 Using structure systems analysis tools, define the system requirements
- 11.6 Design information systems interfaces appropriate to end-user needs
- 11.7 Develop a training plan
- 11.8 Identify and explain the steps in the systems development life cycle
- 11.9 Explain CASE and rapid application development tools
- 11.10 Develop a conversion plan
- 11.11 Use project management tools to manage information systems development projects

12. Compare, evaluate, and demonstrate skills in the use of different types and levels of programming languages.

- 12.1 Identify, compare, and contrast the types and levels of programming languages
- 12.2 Identify and explain the function of the three basic programming structures
- 12.3 Differentiate between source and object code
- 12.4 Develop a program in a 3rd generation language
- 12.5 Develop a program in a 4th generation language, including such varying 4th generation languages as Focus, dBASE IV, and Lotus Level 1-Level 2-3
- 12.6 Create code for common tasks, such as creating, adding, deleting, sorting, and updating records
- 12.7 Test and debug code
- 12.8 Maintain and reengineer existing code

13. Select and apply information systems across the curriculum.

- 13.1 Demonstrate how information systems can support learning in all curriculum areas
- 13.2 Select information systems hardware and software appropriate to accomplish tasks across the curriculum
- 13.3 Apply information systems hardware and software appropriately to accomplish tasks across the curriculum

14. **Describe positions and career paths in information systems.**

- 14.1 Identify positions and career paths in the field of information systems
- 14.2 Identify common tasks performed by information systems workers
- 14.3 Describe education, experience, skills, and personal requirements for careers in information systems
- 14.4 Recognize the impact of technological change on information systems positions and the resulting need for life-long learning and retraining

15. Use touch keyboarding skills to enter and manipulate text and data.

- 15.1 Develop advanced keyboarding techniques
- 15.2 Enter and manipulate numeric data using the touch method on a 10-key keypad
- 15.3 Identify, compare, and explain features of various keyboards
- 15.4 Develop touch keyboarding skills at acceptable speed and accuracy levels